

NAIADITES OVALIS DAWSON, 1860 (CLASS LAMELLIBRANCHIA);
REQUEST FOR A RULING ON THE INTERPRETATION OF THE
SPECIES. Z.N.(S.) 1514

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The purpose of the present application is to stabilise the interpretation of the nominal species *Naiadites ovalis* Dawson, 1860 (now referred to the genus *Curvirimula* (?) Weir). The case is one in which the original type-material is indeterminate, and it is proposed that a specimen figured subsequently by the original author as belonging to this species should be designated as the type. This species, which is morphologically distinct, occurs in the Riversdale and, perhaps, Cumberland Groups of the Upper Carboniferous on the mainland of Nova Scotia. The rocks of both these groups are non-marine and, in the restricted faunas of these deposits, species of bivalves may prove to be of stratigraphic importance. It is therefore desirable to stabilise the interpretation of *Naiadites ovalis* Dawson. The facts of the case are stated below.

2. J. W. Dawson (1860, Supplement to *Acadian Geology* : 45) first described *N. ovalis* as follows: "Similar in general form to No. 4 [*N. arenaceus*], but much broader in proportion. See paper above cited [Dawson, 1854, *Quart. J. Geol. Soc. London*, 10 : 39], fig. 24 [a left valve]. It occurs in bituminous limestone, with cyprids, in the lower part of the Joggins coal-measures." The only record of *N. ovalis* made by Dawson in his interpretation of Logan's Joggins section refers to an occurrence in Logan's Division 6, in the lower bituminous limestone associated with Coal 7. This horizon is in the Riversdale Group according to Bell. (See Dawson, 1868, *Acadian Geology* : 177 and Bell, 1944, *Geol. Surv. Canada, Mem.* 238 : 15.)

3. Most of Dawson's lamellibranch collection is now in the Redpath Museum, Montreal, but some specimens from it were sent to Wheelton Hind, who figured them (1894, *Quart. J. Geol. Soc. London* 50 : Pl. XX); some of these are still in the British Museum (Natural History). There is no official record of these transactions, although Hind, in the "Explanation of Plate XX", indicated that the only fossil he figured as *Anthracomya ovalis* (Dawson) (fig. 13) belonged to the Geological Survey of Canada. It can now be recognised as specimen No. 10,004 in the Redpath Museum.

4. The following are the only specimens of *Naiadites ovalis* Dawson known in museum collections :—

i. *Redpath Museum.*

Number	Horizon	Locality	Note on reverse of mounting specimen.	Collection	Valve
10,004	"Carboniferous"	Riversdale	Heautype (sic). Type specimen. J.G. ¹ Pl. XX, fig. 13.	Dawson	Left
2, 1170	"	Parrsboro, Nova Scotia	Heautype (sic). C.R.S. ² , p. 129, fig. 11	"	"
10,006	—	Mabou Coal Mines, 1881	—	—	"
2, 1164b	"Middle Carboni- ferous"	Mabou, Cape Breton	Q.J. ¹ 1894, Pl. XX, fig. 11.	G.S.C. ³	"
3129	—	Joggins	—	—	Right

¹ *Quart. J. Geol. Soc. London* 50. ² *Canadian Record of Science*, 1894.

³ *Geological Survey of Canada.*

All the above specimens are labelled *Anthracomya ovalis*. It should be recognised that the notes on the reverse of the mountings are not in the handwriting of Dawson or of his assistant, Ardley. It is assumed that they have been added since Dawson's time, and the absence of such a note is not evidence that the fossil has not been figured.

ii. *British Museum (Natural History).*

Number	Name	Horizon	Locality	Collection	Additional information	Valve
L.38779	<i>Naiadites</i>	Upper Carboniferous Coal Measures.	Joggins Nova Scotia	G. Hinde. Presented 1918.	Handwritten label on sample : <i>Naiadites (Anthracoptera) ovalis</i> Dawson. Coal Measures. Joggins, N.S. Dark blue arrow points to fossil.	Right
L.44457	<i>Anthracomya ovalis</i> (Dawson)	„	South Joggins, Nova Scotia.	Wheelton Hind Colln., 1921.	Redpath Museum-type labels on sample read : <i>A. ovalis</i> Dn. 13 [?] <i>S. Joggins</i> . 269.	Right

5. It is seen in (4) that there are three specimens of *Naiadites ovalis* Dawson from Joggins, none of which is a left valve. Two of the right valves from Joggins may have been seen by Dawson, since Redpath Museum No. 3129 is in Dawson's collection and British Museum (Nat. Hist.) No. L.44457 bears labels like those found on Redpath Museum specimens in addition to the British Museum label. The matrix of the former is an ostracod-rich bituminous limestone; of the latter a coarse, micaceous siltstone. Thus (see 2) it is possible that Redpath Museum No. 3129 came from the type horizon. It is an imperfectly exposed, generically indeterminate specimen of similar size to Dawson's figure. Dawson's 1854 figures are notoriously inaccurate, but the lateral aspect of both Dawson's fig. 24 of this date and Redpath Museum No. 3129 has a Height/Length ratio of about 60 per cent. It is therefore suggested that this fossil may have been reconstructed and reversed to give the figure (which is of a left valve) referred to in Dawson's original description of *Naiadites ovalis*.

The third right valve from Joggins, British Museum (Nat. Hist.) No. 38779, was in the collection of G. Hinde, presented in 1918 and it is improbable that Dawson ever saw it. It is unlikely to be the holotype or a syntype of *Naiadites ovalis* Dawson.

6. Of the remaining fossils listed in (4), Redpath Museum No. 10,006, a generically indeterminate specimen, and Redpath Museum No. 2,1164b are both of the wrong size and shape to be represented by Dawson's 1854 figure. Redpath Museum Nos. 10,004 and 2,1170 are approximately of the same length as Dawson's figure, but both have a higher obliquity and shallower anterior lobe. It is thus unlikely that Dawson figured any of these fossils in 1854, giving an inaccurate locality.

7. From (2) to (6) it follows that the type material of *Naiadites ovalis* Dawson is either the indeterminate specimen Redpath Museum No. 3129, which cannot now be used as a type, or is lost or destroyed,

8. In 1894 (*Canadian Record of Science*: 129) Dawson redescribed the species under the generic name *Anthracomya*: "This species has the general form of the smaller specimens of *A. elongata*, but is broader behind and more tumid in front, so as to be at once distinguishable by the eye. It occurs sparingly in beds from the millstone grit and lower Carboniferous to the middle Coal-formation . . . Our specimens are from the South Joggins, Riversdale and Parrsboro." The accompanying figure 11 is of a left valve from "Lower Carboniferous, Parrsboro." Rocks of Canso and Riversdale age are exposed in the Parrsboro area.

9. Redpath Museum specimen No. 2,1170 from Parrsboro can be recognised as the specimen figured with Dawson's 1894 description, although the figure is inaccurate; this identification was also made by an earlier work (see (4)). The fossil is whitened, like others figured by Dawson. Although the identity of this specimen as the original of Dawson's 1894 figure is certain, it cannot be asserted that it represents the original material.

10. Redpath Museum specimen No. 10,004 from Riversdale is also whitened, but Dawson did not publish a figure of it, although Riversdale was added to the list of localities in 1894. Hind, presumably following Dawson's identification, figured it as *Anthracomya ovalis* (Dawson) in 1894 (see (3)). There is no evidence that it is a syntype. Thus, there seems to be no reason why this specimen, which was not figured by Dawson, should be placed in a higher type category than the specimen figured by Dawson (see (9)), as is suggested by the note "Type specimen" (see (4)).

11. The lamellibranch fauna of the Canso Group at Parrsboro is represented by variants of *Carbonicola* (?) *angulata* (Dawson), whereas the fauna of the Riversdale Group consists of species of *Curvirimula* and *Naiadites*. Dawson considered that all the Carboniferous rocks at Parrsboro were in his Lower Carboniferous.

12. From 4, 8, 9, and 11 it is clear that Dawson was satisfied that specimen No. 2,1170 in the Redpath Museum belonged to his species *Naiadites ovalis*, and that it came from the Riversdale Goup at Parrsboro on the mainland of Nova Scotia. The horizon therefore lies within the stratigraphic group from which it is inferred that the type-material came.

13. I am at present engaged in a systematic revision of the North American Upper Carboniferous non-marine Lamellibranchia in order that they may be used in future taxonomic and stratigraphic studies and for comparison and contrast with the homotaxial British forms which have been intensively studied. I wish therefore to stabilise the interpretation of the species *Naiadites ovalis* Dawson, and ask the International Commission on Zoological Nomenclature:

(1) to give a ruling that the nominal species *Naiadites ovalis* Dawson, 1860 is to be interpreted by reference to the specimen figured by Dawson in 1894 as *Anthracomya ovalis* (No. 2,1170 in the Redpath Museum, Montreal, Canada);

(2) to place the specific name *ovalis* Dawson (as published in the binomen *Naiadites ovalis*) (now referred to the genus *Curvirimula* (?) Weir, 1960) on the Official List of Specific Names in Zoology.